

GE 449.3 (Sections 02, 04)
(Instructors: Richard Burton, Denard Lynch)

Midterm Examination

Tuesday, March 1, 2005

Time Allowed: 70 Minutes

Materials allowed: Text, Notes, EGP Act.

ALL QUESTIONS MUST BE ANSWERED IN PEN

Instructions:

- Please be sure you are in the correct room for the Section you are attending (Burton: 2C40/44; Lynch: 2C01/02).
- For choice questions, including True /False, circle the letter, number or word of the *best* choice. Blanks *may* require a single word, several words or a small phrase to complete, including prepositions or articles. (Note: there is *no penalty* for guessing.)
- Any unqualified references to 'Association', 'member' or 'council' are assumed to be of the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS).
- Any unqualified reference to "engineer(s)" can be assumed to mean Professional Engineer(s). Any reference to the "Act" can be assumed to mean the Engineering and Geoscience Professions Act
- Put your name and student number on the cover page; put *only* your student number on all remaining pages.
- There are 33 questions in total. Weighting for each question is indicated in the left margin (Total marks: 100)

Name:

Paul Timrozek

75 1/2

- 15 1) For each **Term** in the second column, choose the **Phrase** in the third column that provides the best definition for the term. Put the corresponding *letter* for the phrase in the **Answer** column.

Answer	Term	Phrase	
i	Risk	Most good for most people	a
h	Systemic accidents	The authority that is assigned to individuals in the organization such as managers, administrators etc.	b
j	Probable gain	shared power and authority vested among colleagues	c
m	Identification loyalty	The capability inferred because of the authority granted to someone by the institution	d
b	Institutional authority	Moral conduct and principles of action are people's own	e
o	Trade secrets	Based on the respect one has earned through actions and reputation	f
n	Insider information	The product of probability of gain times the full value	g
15	Engineering as experiments	A situation in which several minor mistakes can add up to a major problem	h
e	Moral autonomy	Possibility of suffering harm or loss	i
a	Utilitarianism	This term may be applied to a variety of acts or practices that may involve physical or psychological attacks, coercion, abuse or unwanted provocations.	j
c	Collegiality	Regards moral rules as primary	k
d	Positional power	Partial ignorance, uncertain outcomes, knowledge of the past and monitoring	l
f	Personal power	Term that has more to do with attitudes and emotions, and implies a personal connection with the organization.	m
j	Sexual Harassment	Using knowledge in (about) a company or its products to buy or sell stocks.	n
k	Rule-utilitarianism	Are protected by common law	o
		Only human beings have moral standards	p
		Unclear to parties which moral consideration or principles apply to their situation	q

- 3 2) Langewiesche groups accidents into three types. List the three.

- 1) procedural
2) engineering

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3 2) Langewiesche groups accidents into three types. List the three.

- 1) procedural
- 2) engineer's
- 3) systematic

2 3) The most fundamental right of the engineer is the right of

the right of professional conscience

Student #: 157706

2 4) Generally, the cost to manufacture increases/decreases as the risk increases, but the safety costs increase/decrease. (Circle the words which correctly complete the phrase.).

2 5) A person who works hard, does his/her job diligently and works a full eight hour day would be classified as a displaying identification loyalty by the company she/he works for.
agency or institutional

4 6) As defined in the notes, list four elements of "Collegiality"

- 4
- 1) respect
 - 2) connectedness
 - 3) commitment
 - 4) cooperation

2 7) Refusing to work on a project based on a personal feeling that it is unethical is called the right of conscientious refusal

2 8) On which of the following factors does the perception of safety and risk **not** depend (circle appropriate factor(s)):

- 2
- a) Delayed vs immediate risk
 - b) Reversible effects
 - c) Precise calculations
 - d) Who is asked

4 9) According to Fleddermann, there are four criteria to be met to ensure a safe design. List them.

- 4
- 1) Comply with applicable laws
 - 2) meet standard of "accepted engineering practice"
 - 3) safer designs must be explored
 - 4) attempt to foresee potential misuses of the product by the consumer and design against it.

2 10) The basic right of an individual to control access to and the use of information about himself/herself is called confidentiality.

privacy

4 11) What is the difference between safety factor and safety margin?

4
Safety factor is the ratio of expected capability to the expected capability \rightarrow
and safety margin is the overlap between capability and duty.

2 12) Price-fixing is an anti-competitive behavior in that it can be directed towards prices offered to the public or in supposedly "competitive" bids.

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2 12) Price-fixing is an anti-competitive behavior in that it can be directed towards prices offered to the public or in supposedly "competitive" bids. det. from Eng.

2 13) Engineering ethics may best be defined, by Fleddermann, as : the

rule governing professional conduct

- 4 14) State the differences between the following terms: Privileged information, Proprietary information, trade secrets, patents.

Privileged information info that only select people or companies have access to.

Proprietary information info that the company owns.

Trade secrets info only known by company and held secret (not protect)

Patents a method of legal protection of info.

- 2 15) According to Fleddermann, professional conscience is: right of refusal and

- 2 16) Briefly describe an example of an action that is legal but unethical:

Refusing to give an poor person who is sick a discount on a drug they need but cannot pay the full price for.

- 2 17) Briefly describe an example of an action that is illegal but ethical:

Selling a company that manufactures a drug that was recently banned in a country but is still on the shelves because they're unaware.

- 2 18) The following are some attributes of a professional organization of the bar.

- 1) requires sophisticated skills, judgment, exercise of discretion, and is not routine
- 2) requires extensive formal training
- 3) public allows self regulation
- 4) significant public good results from the practice of the profession

- 4 19) For professionals, "discretion" has two different meanings. Describe them. keeping - secret.

1. To do decide in a certain situation.
2. To do discretion in certain situations setting. making an ethical decision

- 4 20) List two elements that help describe what a code of ethics is, and two things that a code of ethics is not.

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other setting. making an ethical decision

- 4 20) List two elements that help describe what a code of ethics is, and two things that a code of ethics is not.

4 Is: inspiring and guidance Is not: A law

Deterrence & discipline absolutely required
to be followed.

- 3) 21) Professional "societies" can be operated according to either a "social contract" model or a "business" model (Fleddermann). List the prime objective of each.

"social contract": protect society ✓

"business model": protect the business ✓

Which model best describes APEGS? social model ✓

- 3) 22) The three main attributes of a professional that influence the public's level of trust are:

1) the media 2) skill 3) experience ✓

- 2) 23) A dam has collapsed with fortunately, no loss of life and only marginal environmental damage. A similar dam in the region had collapsed years ago but under a slightly different situation. The engineer who designed the second dam applied an extensive technical analysis which showed that the dam was safe and was within all acceptable standards at the time. Which one of the following would best describe what the engineer did not practice.

- a) Good professional ideals and virtues
b) Normative enquiry
c) Engineering as social experimentation ✓
d) Risk assessment
e) Code of ethics

Why? Not all elements can be controlled
sometimes all the available facts aren't enough.

- 2) 24) A Professional Engineer may be granted a license for Permission to Consult providing they have at least 5 years experience acceptable to the Council. (stupid 5 for Assoc. geoscientist)

- 2) 25) Which of the following phrases best describes virtue ethics?

- a) Duties arise because people have rights.
b) Based on maximizing goodness - "the most good for the most people".
c) Right actions are dictated by a list of duties.
d) Assumes ethical behaviour follows from personal traits or characteristics

- 2) 26) [True / False] If a member uses a design produced by another member without their permission, the grievd member is bound by the APEGS's Code of Ethics and must, once they become aware, report this conduct to the Association, even if they are the only wronged party in this situation and do not wish to report.

- 2) 27) A person whose moral decisions are based primarily on self-interests or to avoid "getting caught" may be described as having reached the pre-convention level of moral development.

- 4) 28) List several reasons why a "professional athlete" does not satisfy the generally accepted definition of a learned professional:

(stupid 5 for pro. geoscientist)

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- 27) A person whose moral decisions are based primarily on self-interests or to avoid “getting caught” may be described as having reached the pre-convention level of moral development.
- 28) List several reasons why a “professional athlete” does not satisfy the generally accepted definition of a learned professional:

accept moral responsibility specific knowledge
protect the environment protect public interest

2 29) Which of the following statements is (are) incorrect?

- a) Ethics is an activity and an area of inquiry
- b) Ethics makes a contrast between moral questions and questions of legal and political and artistic nature
- c) Ethics refers to currently accepted codes and standards of conduct endorsed by various groups of engineers and engineering societies
- d) Ethics is a study of solely individual morality and ideals
- e) None of the above

4 30) List the four main types of ethical theories

- 1) Militarism (Act and Rule)
- 2) Duty Ethics
- 3) Rights Ethics
- 4) Virtue Ethics

4 31) What were the names of the two presenters from APEGS, and what were their responsibilities within the Association?

Name1: Denis Padlock

Responsibility/Title: President Executive - Director

Name2: Bob MacDonald

Responsibility/Title: Lawyer

2 32) List two ways the practice of engineering is similar to experimentation.

- 1) Both try to solve problems or new ways to solve them
- 2) Both deal with unknowns in the process.

2 33) Circle the statement(s) below which does (do) **not** describe laws:

- a) are generally applied without exception
- b) provide support when conflicting interests exist
- c) define a minimum standard of behaviour acceptable to society
- d) are necessary to achieve overall good where responsibility is broadly distributed.
- e) are generally broad enough so they can accommodate changes in technology